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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,719	08/05/2003	Toshio Tsuchiya	520.43000X00	5693
20457	7590	06/29/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP			GIESY, ADAM	
1300 NORTH SEVENTEENTH STREET			ART UNIT	PAPER NUMBER
SUITE 1800			2651	
ARLINGTON, VA 22209-3873			DATE MAILED: 06/29/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/633,719	TSUCHIYA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Adam R. Giesy	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 April 2005.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-14 is/are pending in the application.  
 4a) Of the above claim(s) 5-13 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4 and 14 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 05 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 11/4/2003.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Invention I – claims 1-4 and 14 in the reply filed on April 4, 2005 is acknowledged. The traversal is on the ground(s) that all claims are directed to the same invention whether in terms of a process or apparatus. This is not found persuasive because Applicant fails to explain how the separate utility of the inventions alleged by Examiner in the Restriction mailed on March 2, 2005 are incorrect.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 5-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on April 4, 2005.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Usui (US Pat. No. 6,172,831 B1).

Regarding claim 1, Usui discloses a magnetic recording and reproducing apparatus of a helical scan system capable of writing or reading signals simultaneously to or from a plurality of tracks while winding a magnetic tape to a rotary drum diagonally

(see column 2, lines 13-15), said apparatus comprising: at least one multitrack write head having N (N being an integer of 2 or more) (see Figure 1 – this figure depicts 2 write heads on the same side of the rotary drum) write elements arranged rotary drum along a track width direction in an integral fashion (see Figure 2A – with the direction of the tape, indicated by the arrow labeled 'Dr', it is shown that the write heads 'Wa' and 'Wb' are located at different heights along the width of the tape – the width of the tape is perpendicular to the length or direction of the tape – therefore the heads can be said to be arranged along the width of the tape); and at least one multitrack read head having read elements arranged along the track width direction in an integral fashion are formed on the rotary drum (see Figure 2B – with the direction of the tape, indicated by the arrow labeled 'Dr', it is shown that the read heads 'Ra' and 'Rb' are located at different heights along the width of the tape – the width of the tape is perpendicular to the length or direction of the tape – therefore the heads can be said to be arranged along the width of the tape), the number of the read elements being an integral multiple of N (see Figure 1 – this figure depicts 2 read heads on the same side of the rotary drum); wherein the multitrack write head writes signals to a group of N signal tracks aligned parallel on the magnetic tape during one rotation of the rotary drum (see Figure 3, elements 'Ta' and 'Tb'); and wherein the multitrack read head reads the group signal tracks by the use of any one of the read elements (see column 2, lines 10-12).

Regarding claim 3, Usui discloses all the limitations of claim 1 as discussed in the claim 1 rejection above, and further that the azimuth angles of the write elements of the multitrack write head and the read elements of the multitrack read head are set to

an identical value (see Figures 2A and 2B); a read width each of the read elements of the multitrack read head is set to substantially  $\frac{1}{2}$  of a signal track width formed on the magnetic tape (column 5, lines 49-55 – see also Figure 2B); repetition interval of the read elements the track width direction set to  $\frac{1}{2}$  of a signal track pitch (column 5, lines 49-55 – see also Figure 2B); and the multitrack read head reads signals in accordance with a non-tracking system from the group of signal tracks (column 4, lines 46-54).

Regarding claim 14, Usui discloses a magnetic recording and reproducing apparatus of a helical scan system capable of writing or reading signals simultaneously to or from a plurality of tracks while winding a magnetic tape to a rotary drum diagonally (see column 2, lines 13-15), said apparatus comprising: at least one multitrack write head having N (N being an integer of 2 or more) (see Figure 1 – this figure depicts 2 write heads on the same side of the rotary drum) write elements arranged on the rotary drum along a track width direction in an integral fashion (see Figure 2A – with the direction of the tape, indicated by the arrow labeled 'Dr', it is shown that the write heads 'Wa' and 'Wb' are located at different heights along the width of the tape – the width of the tape is perpendicular to the length or direction of the tape – therefore the heads can be said to be arranged along the width of the tape); and at least one multitrack read head having read elements arranged along the track width direction in an integral fashion are formed on the rotary drum (see Figure 2B – with the direction of the tape, indicated by the arrow labeled 'Dr', it is shown that the read heads 'Ra' and 'Rb' are located at different heights along the width of the tape – the width of the tape is perpendicular to the length or direction of the tape – therefore the heads can be said to

be arranged along the width of the tape), the number of the read elements having L (L being an integer equal to or more than N) (see Figure 1 – this figure depicts 2 read heads on the same side of the rotary drum); wherein the multitrack write head writes signals to a group of N signal tracks aligned parallel on the magnetic tape during one rotation of the rotary drum (see Figure 3, elements 'Ta' and 'Tb'); and wherein the multitrack read head reads the group of N signal tracks by the use of any one of the read elements (see column 2, lines 10-12).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui (US Pat. No. 6,172,831 B1) in view of Saito (US Pat. No. 5,412,520).

Regarding claim 2, Usui discloses all of the limitation of claim 1 as discussed in the claim 1 rejection above. Usui, however, fails to disclose a controller, or pilot signals.

Saito discloses a controller for controlling a magnetic tape feed rate in reading the signals (see column 3, lines 30-53), wherein the write head writes pilot signals having different pilot frequencies to N signal tracks belonging to a group of signal tracks of an identical azimuth, the pilot frequencies of the adjacent signal tracks being different from each other (see column 1, lines 46-64 and column 2, lines 52-58 – see also Figure 4); the read head reads the pilot signals from a signal track to be reproduced and

another signal track (column 4, lines 46 thru column 5, line 2); and the controller controls the tape feed rate based on a ratio of the pilot signal component to be reproduced (column 3, lines 30-53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the magnetic recording and reproducing apparatus of Usui with the control and pilot signals as disclosed by Saito in order to more accurately reproduce tracks recorded on magnetic tape.

Regarding claim 4, Usui discloses all of the limitation of claim 1 as discussed in the claim 1 rejection above. Usui, however, fails to disclose a controller, or servo signals.

Saito discloses a controller for controlling movement of the read head in the track width direction in reading the signals, wherein the write head writes servo signals to predetermined regions of the magnetic tape (see column 3, lines 30-53); the read head reads the servo signals (see column 3, lines 30-53); and the controller detects a tracking shift amount based on timings at which the servo signals to be reproduced are read to control positioning of the read head (see column 3, lines 54-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the magnetic recording and reproducing apparatus of Usui with the control and servo signals as disclosed by Saito in order to more accurately reproduce tracks recorded on magnetic tape.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Tomitaka (US Pat. No. 5,424,886) discloses a magnetic tape device with fuzzy servo control.
- b. Norton, Jr. (US Pat. No. 6,433,945 B1) discloses a rotating drum with multiple read and write heads.
- c. Ozue (US Pat. No. 6,141,166) discloses multiple read and write heads that are arranged on a rotating drum.
- d. Fukuda (US Pat. No. 6,278,569 B1) discloses a track pattern on magnetic tape that overlaps and utilizes servo signals.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARG 6/22/2005

DAVID HUDSPETH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600